Earth Science—Chart 2

Agency Near-Term Goals	Earth Science Near-Term Goals	Objectives	Performance Targets
Develop lower cost missions: Characterize the Earth system with data, models, and analysis	Expand scientific knowledge by characterizing the Earth system		• Successfully launch four spacecraft, within 10 percent of budget on average.
		• Understand the causes and consequences of land-cover/ land-use change	• Refresh the global archive of 30m land imagery from Landsat 7. • Collect near-daily measurements of the terrestrial biosphere. • Collect near-daily measurements of ocean color.
		• Predict seasonal-to-interannual climate variations	• Begin the second of a three-year sequence of instantaneous measurements of rainfall rates and monthly accumulations in the global tropics. • The QuikScat spacecraft will provide wind speed and direction measurements over at least 90 percent of the ice-free global oceans every two days.
		• Identify natural hazards, processes, and mitigation strategies for floods, droughts, and volcanoes	• The Enterprise will provide the technology and instruments to collect Synthetic Aperture Radar (SAR) data, which will provide data sufficient to create a digital topographic map of 80 percent of the Earth's land surface.
		• Detect long-term climate change, causes, and impacts	• Conduct daily observations of cloud properties such as extent, height, optical thickness, and particle size. • Map aerosol formation, distribution, and sinks over the land and oceans. • Achieve a 40 percent reduction in the uncertainty in the Earth's radiation balance.
		• Understand the causes of variation in ozone concentrations and distribution in the upper and lower atmosphere	• TOMS will use new retrieval methods to collect and analyze three new data products. • SAGE III will provide measurements of the distribution of trace constituents, terperature, aerosols, and cloud presence. • Complete the major model-measurement intercomparison for atmospheric chemistry/transport models. • Complete the detailed multi-aircraft study of tropospheric chemistry over the tropical Pacific Ocean. • Measure surface levels of chlorine- and bromine-containing chemical compounds addressed under the Montreal Protocol.
• Develop and transfer cutting-edge technologies • Share new knowledge with our customers and contribute to educational excellence	• Disseminate information about the Earth System	• Improve dissemination of Earth Science research results	• Make available data on prediction, land surface, and climate users within five days. • Double the volume of data archived compared to FY97. • Increase the number of distinct customers by 20 percent. • Increase products delivered from the DAACs by 10 percent.
		• Incorporate education and enhanced public understanding of science as an integral component of Earth Science missions and research	• Award 50 new graduate student research grants. • Award 20 early career fellowships in Earth Science.
• Stimulate the application of NASA technology in the private sector and promote commercial use of space	• Enable the productive use of Earth Science and technology in the public and private sectors	• Make major scientific contributions to national and international environmental assessments	• Contribute to the Atmospheric Effects of Aviation. • Contribute to the U.S. regional/national assessment(s) in partnership with USGCRP agencies. • Contribute to the World Meteorological Organization Ozone Assessment. • Contribute to the Intergovernmental Panel on Climate Change Report.
		• Develop innovative technologies for Enterprise missions and for transfer to external customers	• Achieve an 80 percent reduction in mass for a future land imaging instruments. • Demonstrate a new capability to double the calibration quality for moderate resolution land imagery.
		• Extend the used Earth Science research to national, state, and local applications	• Establish at least five new Regional Earth Science Applications Centers. • Establish 75 commercial partnerships in "value-added" remote sensing product development.